

**Amendments to the Claims**

This listing of claims will replace all the prior revisions, and listings of claims in this application.

**Listing of Claims**

- 1 1. (Previously Presented) An optical transmitter for generating optically labeled packets  
2 comprising:
  - 3 a phase modulator driven by a payload signal to provide DPSK modulation of a  
4 payload portion of optically labeled packets; and
  - 5 an intensity modulator coupled to the phase modulator, the intensity modulator  
6 being driven by a label signal to provide ASK modulation of a label portion of  
7 optically labeled packets;
  - 8 wherein said payload signal is at a higher speed than said label signal.
- 1 2. (Original) The transmitter of claim 1 wherein the phase modulator and the intensity  
2 modulator are modulators selected from the group consisting of a Mach-Zehnder  
3 modulator, a single-wavelength modulator or an electro-absorption modulator.
- 1 3. (Original) The transmitter of claim 1 wherein the payload signal is a high speed signal  
2 having a data rate of greater than about 2.5Gb/s and the label signal is a low speed signal  
3 having a data rate of less than about  $\frac{1}{4}$  of the data rate of the payload signal.
- 1 4. (Original) The transmitter of claim 1 wherein the extinction ratio of the ASK  
2 modulation is between about 2 dB and about 8 dB.
- 1 5. (Original) The transmitter of claim 1 further comprising a differential encoder coupled  
2 to a phase modulator.

1 6. (Previously Presented) A system comprising:  
2 a transmitter for generating optically labeled packets, the transmitter including  
3 a phase modulator driven by a payload signal to provide DPSK modulation of  
4 a payload portion of the optically labeled packets; and  
5 an intensity modulator coupled to the phase modulator, the intensity  
6 modulator being driven by a label signal to provide ASK modulation of a  
7 label portion of the optically labeled packets;  
8 wherein said payload signal is at a higher speed than said label signal.

1 7. (Original) The system of claim 6 further comprising a receiver including a balanced  
2 detector for detection of the DPSK modulated payload portion of the optically labeled  
3 packets.

1 8. (Original) The system of claim 6 further comprising a wavelength converter for  
2 providing wavelength conversion of the optically labeled packets using a four-wave  
3 mixing process while maintaining the phase and amplitude of the optically labeled  
4 packets.

1 9. (Previously Presented) The system of claim 6 further comprising means provide label  
2 insertion, label removal and/or label reading.

1 10. (Currently Amended) A system for transmission of optically labeled packets  
2 comprising:

3 ~~a transmitter including at least two modulators adapted to provide DPSK modulation~~  
4 ~~of a payload portion of optically labeled packets and ASK modulation for a label~~  
5 ~~portion of the optically labeled packets;~~

6 a transmitter including:

7 a phase modulator driven by a payload signal to provide DPSK modulation of  
8 a payload portion of optically labeled packets; and

9           an intensity modulator coupled to the phase modulator, the intensity  
10           modulator being driven by a label signal to provide ASK modulation of a  
11           label portion of optically labeled packets; and  
12           a receiver in optical communication with said transmitter, said receiver including a  
13           balanced detector for detection of the payload portion of the optically labeled  
14           packets;  
15           wherein said payload portion is at a higher speed than said label portion.

1   11. (Currently Amended) A communication method for transmission of optically labeled  
2   packets comprising the step of:  
3       ~~modulating light from a laser source using DPSK modulation to carry payload~~  
4       ~~information and ASK modulation to carry label information, wherein said~~  
5       ~~payload information is at a higher speed than said label information~~  
6       generating DPSK modulation of a payload portion of optically labeled packets  
7       through the effect of a phase modulator driven by a payload signal; and  
8       generating ASK modulation of a label portion of optically labeled packets through the  
9       effect of an intensity modulator driven by a label signal, said intensity modulator  
10       being coupled to the phase modulator  
11       wherein said payload information is at a higher speed than said label information.

1   12. (Original) The method of claim 11 further comprising receiving the optically labeled  
2   packets using a balanced detector to detect the payload portion of the optically labeled  
3   packets.

1   13. (Original) The method of claim 11 wherein modulating the light from the laser source  
2   is performed using a phase modulator and an intensity modulator, the modulators selected  
3   from the group consisting of a Mach-Zehnder modulator, a single-wavelength modulator  
4   or an electro-absorption modulator.

1   14. (Original) The method of claim 11 wherein the payload of the optically labeled  
2   packets contains high speed data at a data rate of greater than about 2.5 Gb/s, and the

3 label contains low speed data at a data rate of less than about  $\frac{1}{4}$  of the data rate of the  
4 payload.

1 15. (Original) The method of claim 11 wherein the extinction ratio of the ASK  
2 modulation is between about 2 dB and about 8 dB.

1 16. (Cancelled) The method of claim 11 further comprising providing pulse generation to  
2 allow for generation of RZ DPSK payload signals.

1 17. (Previously Presented) An optical transmitter comprising:  
2 a first modulator means driven by a payload signal to provide DPSK modulation of a  
3 payload portion of optically labeled packets; and  
4 a second modulator means coupled to the first modulator means, the second  
5 modulator means being driven by a label signal to provide ASK modulation of a  
6 label portion of optically labeled packets;  
7 wherein said payload signal is at a higher speed than said label signal.

1 18. (Currently Amended) A communication system for transmission of optically labeled  
2 packets comprising:  
3 ~~means for modulating light from a laser source using DPSK modulation to carry~~  
4 ~~payload information and ASK modulation to carry label information;~~  
5 means for DPSK modulating a payload portion of optically labeled packets wherein  
6 said DPSK modulating means is driven by a payload signal; and  
7 means for ASK modulating a label portion of the optically labeled packets wherein  
8 said ASK modulating means is driven by a label signal;  
9 wherein said payload information is at a higher speed than said label information.